



Air Quality Summary—December 2012



Baton Rouge Area

OZONE

There were no days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in the Baton Rouge area during the month of December, 2012. Please see the graph on page two for daily air quality index levels in the Baton Rouge area during December.

No Action Days were called for the Baton Rouge area during the month of December.

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} in the Baton Rouge area during the month of December, 2012. Please see the chart and table on the next page for detailed information on PM_{2.5} levels throughout the state.

Other Areas of the State

OZONE

There were no days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in areas of the state other than Baton Rouge during the month of December, 2012.

No Action Days were called for any area of the state during the month of December.

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} during the month of December, 2012. Please see the graph and table on the next page for detailed information on PM_{2.5} levels throughout the state.



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Good

Moderate

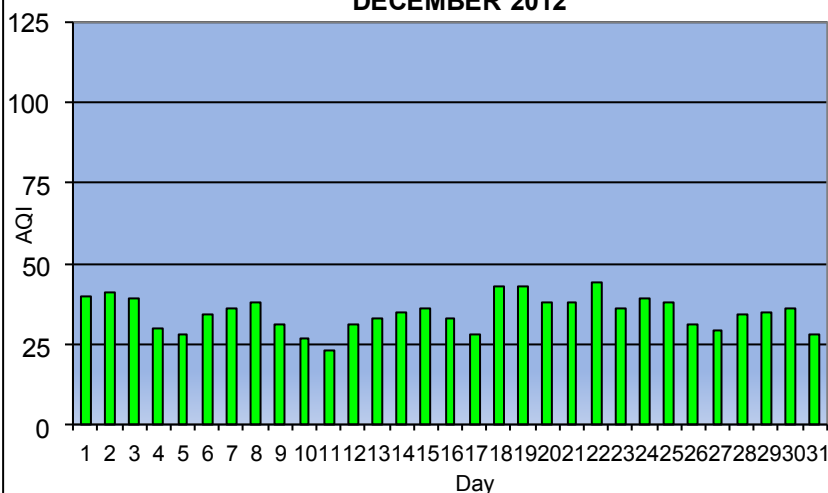
Unhealthy for Sensitive Groups

Unhealthy

Very Unhealthy

Hazardous

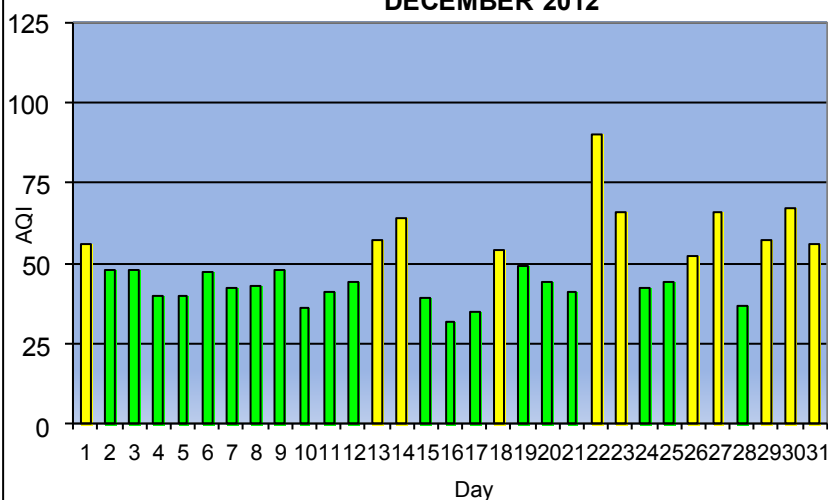
**Baton Rouge Area Daily Maximum AQI For Ozone
DECEMBER 2012**



Statewide High PM_{2.5} 24-Hour Average Readings - DECEMBER 2012

DAY	UG/m3	AQI	SITE
1	17.4	56	Monroe
2	14.8	48	Monroe
3	14.7	48	Port Allen
4	12.2	40	Monroe
5	12.2	40	Monroe
6	14.4	47	Monroe
7	12.9	42	Monroe
8	13.1	43	Monroe
9	14.7	48	Monroe
10	11.2	36	Monroe
11	12.7	41	Monroe
12	13.5	44	Monroe
13	18	57	Monroe
14	20.7	64	Lafayette
15	12	39	Monroe
16	9.8	32	Monroe
17	10.9	35	Monroe
18	16.7	54	Monroe
19	15.2	49	Capitol
20	13.5	44	Alexandria
21	12.6	41	Lafayette
22	31.4	90	Port Allen
23	21.5	66	Port Allen
24	12.8	42	Monroe
25	13.5	44	Chalmette Vista
26	15.8	52	Monroe
27	21.7	66	Lafayette
28	11.4	37	City Park
29	17.8	57	Monroe
30	21.9	67	Lafayette
31	17.5	56	Kenner

**Statewide Daily Maximum AQI For PM_{2.5}
DECEMBER 2012**



Baton Rouge Climate Summary—December 2012

**Prepared by: Jay Grymes*

(based on available preliminary data as of February 17, 2013)

December 2012's monthly average temperature was 56.3°F for Baton Rouge's Metro Airport, 2.9° above the monthly norm. December ends Baton Rouge's recent run of four consecutive 'cooler-than-normal' months. December 2012 ranks as the 24th "warmest" December for Baton Rouge based on records back to 1906 (107 years) and the "warmest" December since 2008.

The first half of 2012 was marked by record-warmth for the greater Baton Rouge metro area, setting the stage for an unusually warm year. Even with the August-thru-November run of below-normal average monthly temperatures, Baton Rouge's 2012 annual average temperature of 69.9°F ranks among the ten "warmest" years on record (since 1906) and the Red Stick's "warmest" year since 1990 (which also averaged 69.9°).

The first ten days of December were rather mild: temperatures for all ten days were above-average, with six of those days running more than 10° above normal. Highs reached 80° on Dec 2nd and 3rd. December's first cool spell began on the 11th, following a strong cold-front passage. Baton Rouge's first December "freezes" were recorded on the mornings of the 13th (30°) and 14th (32°). Freezes were also recorded on the mornings of the 22nd (30°) and 30th (28°) -- the total of four freezes for the month being shy of the long-term December average of six "freeze days."

December's average monthly maximum temperature was 67.4°, 3.3° above the norm. In addition to the 80° highs on the 2nd and 3rd, daily highs reached the 70°s on 12 other dates -- on average, December has 10-11 days with highs of 70° or more. December's average monthly minimum was 45.1°, 2.4° above the norm. There were 12 days when minimums remained at or above 50°, with three days -- Dec 4, 5 & 16 -- with minimum temps of 60° or more.

Notable frontal-weather periods during December included Dec 5, 10, 17-18, 20, 24-25 and 28. All six frontal events are evident in temperature and precipitation series for Baton Rouge (Fig. 1), as all six produced measurable rainfall (as well as drops in temperatures). In fact, five of the six frontal periods generated 1.00" of rain or more at Metro Airport.

Table 1: Average "daylight" sky conditions (to 12,000 ft) during December 2012, based on automated ASOS observations from Baton Rouge's Metro Airport.

Sky Condition: Sunrise to Sunset (Sky Coverage)	Clear to Mostly Sunny (0/10ths – 3/10ths)	Partly Cloudy / Partly Sunny (4/10ths – 6/10ths)	Mostly Cloudy to Cloudy (7/10ths – 10/10ths)
No. Days	13	7	11

December sunrise-to-sunset periods for Baton Rouge range from 10.3 hours (Dec 1) to the annual minimum of just under 10.2 hours (the winter solstice, Dec 21) to 10.2 hours (for the last day of the year).

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Table 2: December 2012 rainfall for selected sites across the greater Baton Rouge metro area. (Data are preliminary and provided courtesy of the National Weather Service, the LSU Southern Regional Climate Center, the LSU AgCenter, and the CoCoRaHS Volunteer Network.)

Rainfall-Recording Site	Monthly Rainfall	Monthly DFN	No. Days ≥ 0.01"	No. Days ≥ 1.00"
<i>NWS Cooperative Network Sites</i>				
BR – Metro Airport	8.10"	+2.50"	11	4
BR - Concord Estates	9.15"	+3.50"	11	4
BR - Sherwood Forest	8.92"	+3.40"	11	3
Clinton	7.69"	+2.16"	8	3
Denham Springs	6.35"	+1.27"	14	3
Dutchtown	5.04"	--	10	2
Gonzales	4.20"	-1.32"	11	2
Livingston	9.08"	+3.54"	12	5
New Roads	10.39"	+4.69"	9	4
Oaknolia	10.35"	+4.46"	8	5
Plaquemine	5.78"	+0.53"	8	2
Port Allen	8.14"	+2.60"	10	4
St. Francisville	11.54"	+5.49"	14	4
St. Gabriel	5.17"	-0.03"	12	2
<i>CoCoRaHS Volunteer Observers</i>				
Baton Rouge 2.7 SW (LA-EB-2)	8.48"	--	11	4
Baton Rouge 3.5 E (LA-EB-14)	9.75"	--	11	4
Baton Rouge 2.5 E (LA-EB-27)	9.13"	--	14	4
Baton Rouge 4.3 S (LA-EB-41)	8.23"	--	10(e)	3
Baton Rouge 1.4 WSW (LA-EB-46)	8.33"	--	11	3
Baton Rouge 5.3 S (LA-EB-47)	9.41"	--	12	4
Baton Rouge 2.1 S (LA-EB-48)	8.85"	--	10	4
Brownfields 5.8 NE (LA-EB-9)	4.67"(i)	--	M	M
Inniswold 2.8 S (LA-EB-42)	6.85"	--	12	2
Monticello 3.0 ENE (LA-EB-19)	8.32"(i)	--	M	M
Monticello 3.0 SSW (LA-EB-20)	2.24"(i)	--	M	M
Monticello 4.6 NNE (LA-EB-31)	10.89"	--	9	4
Shenandoah 2.1 W (LA-EB-18)	6.40"	--	10	3
Shenandoah 1.5 E (LA-EB-22)	5.89"	--	12	2
Shenandoah 0.8 W (LA-EB-36)	4.27"(i)	--	M	M
Zachary 3.5 WNW (LA-EB-28)	9.46"	--	12	4
Gonzales 4.0 S (LA-AS-5)	3.19"	--	10	0
Gonzales 1.8 NE (LA-AS-9)	M	--	M	M
Prairieville 1.8 NW (LA-AS-10)	7.13"	--	10	2
Port Vincent 4.4 W (LA-AS-2)	6.52"	--	8	2
Wakefield 0.9 WNW (LA-WF-4)	8.78"	--	11(e)	3
<i>Additional Metro Area Sites</i>				
LSU Campus (LA-EB-33)	8.53"	--	12	4
WAFB-TV, Downtown BR	6.96"	--	12	2
LSU AgCenter Ben Hur Farm	7.75"	--	14	2

DFN - Departure-from-Normal

-- - Normals Not Available

M - Missing Value

(e) - Estimated Value

(i) - Incomplete Total

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(based on available preliminary data as of February 17, 2013)

Baton Rouge Metro AP's rainfall for December 2012 totaled 8.10", 2.50" above the 1981-2010 norm. December was 2012's second "wettest" month for Metro AP (behind August's 10.82"); in fact, the December total at Metro AP was larger than the total rain recorded at that location during the three previous months combined.

Although far from a record, Metro AP's December total ranks among the top 25 December totals, dating back to 1888, and the "wettest" December since the whopping 14.86" in December 2009.

Table 3: Distribution of December 2012 rain totals based on sites (Table 2) with complete monthly records for the month (33 sites).

No. Stations	No. Stations	No. Stations	No. Stations	No. Stations	No. Stations
≤ 6.00"	6.01" - 7.00"	7.01" - 8.00"	8.01" - 9.00"	9.01" - 10.00"	> 10.00"
6	5	3	9	6	4

Based on the 33 sites included in Table 2 (with complete monthly totals), metro area regional rainfall for December 2012 averaged 7.89", with a median of 8.23" -- both values well above the regional average of roughly 5.5" to 6.0" for the month. Yet not every site managed to exceed the monthly average. The regional distribution of December rainfall shows a north-to-south gradient: three of the four double-digit totals were recorded north of Baton Rouge, while the majority of reports under 6.0" occurred south and southeast of the Capital City.

The majority of metro area sites recorded measurable rainfall on 10 to 12 days during December (by comparison, Metro AP averages 9 raindays during the month), with the majority of sites recording 3 to 4 days with one-inch or more of rain (compared to a long-term average of 1-2 days for the month).

December 2012 reports from the Baton Rouge Metro Airport ASOS (Automated Surface Observation system) weather platform included:

- 5 days with thunder (Dec 4, 10, 16, 25 & 38), compared to a long-term December average of 2 days;
- 18 days with fog, including each of the first 10 days in December ... 4 days (Dec 1, 7, 8 & 25) with "dense" fog (visibility under 1/4-mile); and
- 3 days (Dec 7, 20 & 22) with smoke and/or haze.

Winds at Metro Airport during December 2012 averaged 6.1 mph for the month, just under the long-term December average of 6.8 mph. Daily winds averaged above 10.0 mph on Dec 20, 25 and 28, with winds averaging a 'windy' 14.0 mph on Christmas Day. Daily winds averaged less than 5.0 mph on 13 days during December 2012, with average daily winds under 3.0 mph (essentially 'calm') on 4 dates (Dec 6, 7, 13 & 22). Peak gusts topped 20.0 mph on 18 days, with gusts exceeding 30.0 mph on 5 dates. Maximum gusts reached 45 mph on Dec 25th and 49 mph on Dec 20th.

Drought Status:

Although drier-than-normal weather was the rule during October and November, December rains erased any threat of drought for the greater Baton Rouge metro area. At year's end, the weekly **U.S. Drought Monitor** (Fig. 3) shows areas rated as 'Abnormally Dry' to the northwest and southeast of the metro area, but the metro area is deemed to have adequate moisture or this time of year.

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Figure 1: December 2012 *Daily Maximum and Minimum Temperatures and Precipitation* from the Baton Rouge Metro Airport ASOS.

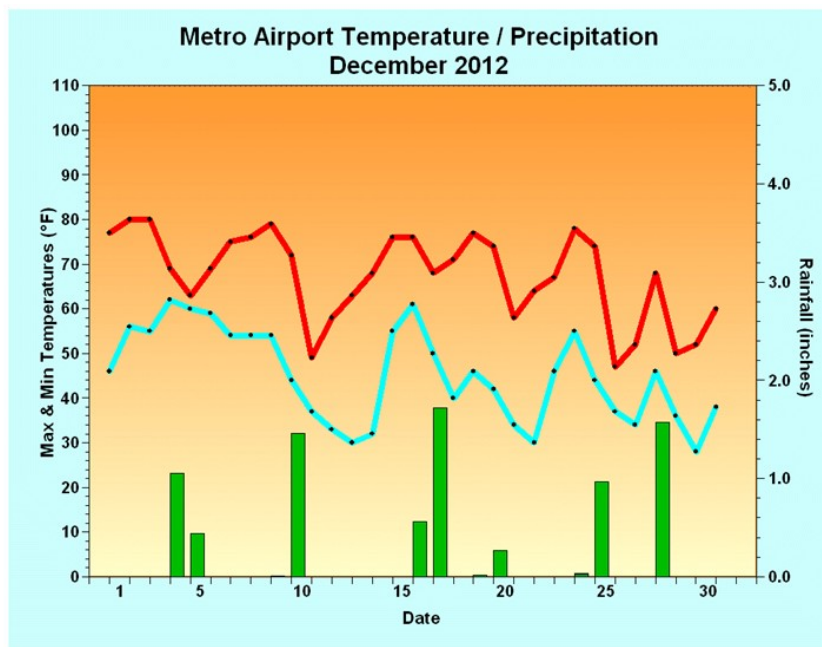
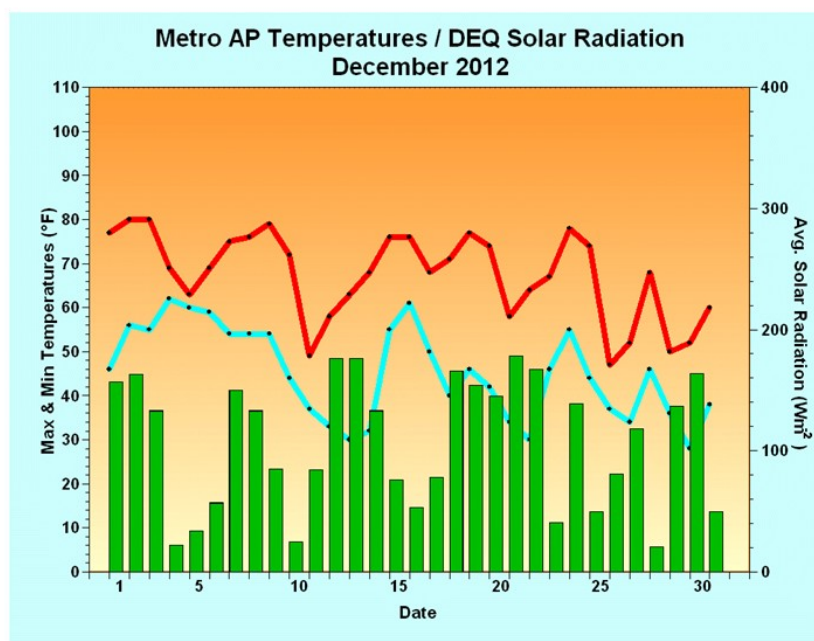


Figure 2: December 2012 *Daily Average Hourly Solar Radiation* as recorded at DEQ's Capitol site and *Daily Maximum and Minimum Temperatures* from the Baton Rouge Metro Airport ASOS.



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Figure 3: Louisiana's weekly **U.S. Drought Monitor** depiction for 1 January 2013.

Source: <http://drought.unl.edu/DM/>

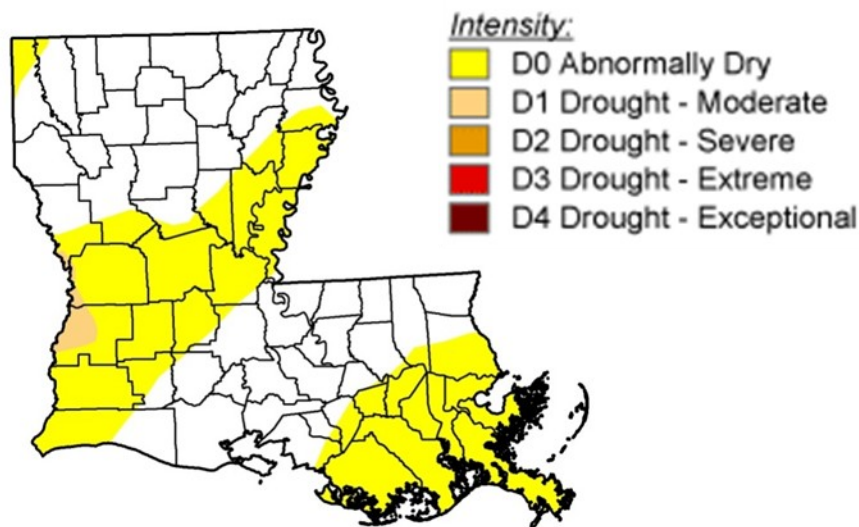


Table 4: December 2012 significant Preliminary 'Local Storm Reports' as posted by the NWS/SPC for the greater Baton Rouge metro area. (Final reports/confirmation available through the NWS.)

Date	Time (CST)	Event	Location	Parish
12 / 10	6:56 AM	EF-1 Tornado	Baker	EBR
12 / 10	7:24 AM	T-Storm Wind Damage	Brusly	WBR
12 / 10	7:36 AM	T-Storm Wind Damage	Greenwell Springs	EBR
12 / 10	8:48 AM	EF-1 Tornado	Gonzales	ASC
12 / 20	4:30 AM	T-Storm Wind Damage	Baton Rouge	EBR
12 / 20	6:35 AM	T-Storm Wind Damage	Gonzales	ASC
12 / 25	3:05 PM	T-Storm Wind Damage	Zachary	EBR
12 / 25	3:23 PM	T-Storm Wind Damage	Grosse Tete	IBR
12 / 25	3:30 PM	T-Storm Wind Damage	St. Francisville	WF

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Acknowledgements:

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- Louisiana Office of State Climatology (LOSC)
- LSU AgCenter / LAIS AgWeather Monitoring Program
- CoCoRaHS Volunteer Network
- U.S. Drought Monitor (<http://drought.unl.edu/DM/>)
- NWS Climate Prediction Center (NWS/CPC)
- NWS Storm Prediction Center (NWS/SPC)
- NWS Hydrometeorological Prediction Center (NWS/HPC)
- NOAA/National Climatic Data Center (NCDC)
- Iowa Environmental Mesonet apps (<http://mesonet.agron.iastate.edu/>)
- WAFB-TV (Ch. 9), Baton Rouge

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*Jay Grymes, LSU AgCenter Climatologist and WAFB Chief Meteorologist, provides the climatology portion of this report as a free service to DEQ and the citizens of Louisiana.